

SEQUENCE LISTING

<110> Orr-Urtreger, Avi
Rennert, Hanna
Bercovich, Dani
Bar-shira, Anat
Yaron, Yuval

<120> OLIGONUCLEOTIDES ANTIBODIES AND KITS INCLUDING SAME FOR TREATING
PROSTATE CANCER AND DETERMINING PREDISPOSITION THERETO

<130> 26328

<160> 41

<170> PatentIn version 3.2

<210> 1

<211> 4166

<212> DNA

<213> Homo sapiens

<400> 1

```
caggtggaat gtcagaagac tgagaacatt gttccttctt catactgctg ctctgttgcc      60
agagaatccc aatttacact caaagcttct ttgattaagt gctaggagat aaatttgcatt    120
tttctcaagg aaaaggctaa aagtggtagc aggtggcatt taccgtcatg gagagcaggg      180
atcataacaa cccccaggag ggaccacgt cctccagcgg tagaagggct gcagtggaag      240
acaatcactt gctgattaaa gctgttcaaa acgaagatgt tgacctggtc cagcaattgc      300
tggaagggtg agccaatgtt aatttcacag aagaggaagg gggctggaca cctctgcata      360
acgcagtaca aatgagcagg gaggacattg tggaacttct gcttcgtcat ggtgctgacc      420
ctgttctgag gaagaagaat ggggccacgc cttttatcct cgcagcgatt gcggggagcg      480
tgaagctgct gaaacttttc ctttctaaag gagcagatgt caatgagtgt gatttttatg      540
gcttcacagc cttcatggaa gccgctgtgt atggttaaggc caaagcccta aaattccttt      600
ataagagagg agcaaatgtg aatttgaggc gaaagacaaa ggaggatcaa gagcggtga      660
ggaaaggagg ggccacagct ctcattggacg ctgctgaaaa aggacacgta gaggtcttga      720
agattctcct tgatgagatg ggggcagatg taaacgcctg tgacaatatg ggcagaaatg      780
ccttgatcca tgctctcctg agctctgacg atagtgatgt ggaggctatt acgcatctgc      840
tgctggacca tggggctgat gtcaatgtga ggggagaaa aggaagact cccctgatcc      900
tggcagtgga gaagaagcac ttgggtttgg tgcagaggct tctggagcaa gagcacatag      960
agattaatga cacagacagt gatggcaaaa cagcactgct gcttgctgtt gaactcaaac    1020
tgaagaaaat cgccgagttg ctgtgcaaac gtggagccag tacagattgt ggggatcttg    1080
ttatgacagc gaggcggaat tatgaccatt cccttgatga ggttcttctc tctcatggag    1140
ccaaagaaga ttttcaccct cctgctgaag actggaagcc tcagagctca cactgggggg    1200
cagccctgaa ggatctccac agaataatcc gccctatgat tggcaaaactc aagttcttta    1260
ttgatgaaaa atacaaaatt gctgatactt cagaaggagg catctacctg gggttctatg    1320
agaagcaaga agtagctgtg aagacgttct gtgagggcag cccacgtgca cagcggaag    1380
tctcttgtct gcaaagcagc cgagagaaca gtcacttggg gacattctat gggagtgaga    1440
gccacagggg ccacttgttt gtgtgtgtca ccctctgtga gcagactctg gaagcgtgtt    1500
tggatgtgca cagaggggaa gatgtggaaa atgaggaaga tgaatttgcc cgaaatgtcc    1560
```

tgtcatctat atttaaggct gttcaagaac tacacttgct ctgtggatac acccaccagg 1620
 atctgcaacc acaaaacatc ttaatagatt ctaagaaagc tgctcacctg gcagattttg 1680
 ataagagcat caagtgggct ggagatccac aggaagtcaa gagagatcta gaggaccttg 1740
 gacggctggt cctctatgtg gtaaagaagg gaagcatctc atttgaggat ctgaaagctc 1800
 aaagtaatga agaggtggtt caactttctc cagatgagga aactaaggac ctcatcctc 1860
 gtctcttcca tcctggggaa catgtgaggg actgtctgag tgacctgctg ggtcatccct 1920
 tcttttgac ttgggagagc cgctatagga cgcttcggaa tgtgggaaat gaatccgaca 1980
 tcaaaacacg aaaatctgaa agtgagatcc tcagactact gcaacctggg ccttctgaac 2040
 attccaaaag ttttgacaag tggacgacta agattaatga atgtgttatg aaaaaatga 2100
 ataagtttta tgaaaaaaga ggcaatttct accagaacac tgtgggtgat ctgctaaagt 2160
 tcatccggaa tttgggagaa cacattgatg aagaaaagca taaaagatg aaattaaaaa 2220
 ttggagaccc ttccctgtat ttccagaaga catttcaga tctggtgatc tatgtctaca 2280
 caaaactaca gaacacagaa tatagaaagc atttcccca aaccacagt ccaaacaagc 2340
 ctcaagtgtg tggagctggt ggggccagt ggtggccag ccctgggtgc tgatggactg 2400
 atttgctgga gttcagggaa ctacttatta gctgtagagt ccttggcaaa tcacaacatt 2460
 ctgggccttt taactcacca ggttgcttgt gagggatgag ttgcatagct gatatgtcag 2520
 tcctggcat cgtgtattcc atatgtctat acaaaaagca atatataccc agactacact 2580
 agtcataag ctttaccac taactgggag gacattctgc taagattcct tttgtcaatt 2640
 gcacaaaaag aatgagtgcc ttgacccta atgtgcata tgttacaatt ctctcactta 2700
 attttccaa tgatcttgca aaacaggat tatcatcccc atttaagaac tgaggaacct 2760
 gagactcaga gagtgtgagc tactggccca agattattca atttatacct agcactttat 2820
 aaatttatgt ggtgttattg gtacctctca tttgggcacc ttaaaactta actatccttc 2880
 cagggtctt ccagatgagg ccaaaacat atataggggt tccaggaatc tcattcattc 2940
 attcagtatt tattgagcat ctagtataag tctgggcact ggatgcatga attccactcc 3000
 ttccagaacc aactgcattg gttttccatg accttaaggc agtagttctc aactggggg 3060
 caattttgca ctgaagagag catttggcag agtctgaaga agtttttggg gtcacagctt 3120
 tgtggggagc atgctatggc atttagtggg taaagaccag ggatgctgcc aaacctgcct 3180
 tgcacaggac agccctgca acaagaatt atccagacaa aaatatcaat ggtgctgagg 3240
 ttgagaaaac ctgacttaag gggctgggat gcttttgaac tagcttaagg ccaggactg 3300
 tggagtgtgt ggaccacccc acagaggagg gactcagatt tatttactct tgctggatct 3360
 gtagtgatgg agttccttct ggtgtcagcc ccacaggagg ctcccaggcc tccctcactt 3420
 cccataccca gtctaggagc tccttctggc tcccaagcac ccagagcttt cctccgcctt 3480
 ttagtttttg ttccctccact ggaatgtagg ctccctacgg gcgatggctg tcttttcttg 3540
 actttgtatc ttactgccca agcaaaaagt ctgccaaagt ggaatgttta ataaatattc 3600
 attgaataat gaatgaacca tcttcgtaca tgaataataa tactgtctta cgtttttctg 3660
 gtgctttata atgtatacat tacatctgag tattttatct tatttaattt tcaaaacaat 3720
 cctttaaggc caacattggt atccctatct tgctgatgag gaaactaagg ttagaaacat 3780
 tttgatttcc tctaggacgt atagctagga agtgttacta tcttgatttg acaaaatttt 3840

ctggtgctaa gtctgatgtt ctttccatga atcattgtgg tggttgagat ggagctttgt 3900
aatgggaata aaacagtacc ttaggttctt tctgaaaagg aggtatctag caatggataa 3960
atagatacca ctgaatgaaa ttaaatgttg attaggaaca aatttaaggc ttaaaaaata 4020
ctttatgagc agcaagattg ctttaacttt taaaatgaag ctttggttct ctgatttgta 4080
atgagcacct ggacatgtca attaaaatgc ccatttgtga agcttactca ataaaacttt 4140
aaattgtcaa aaaaaaaaaa aaaaaa 4166

<210> 2
<211> 15620
<212> DNA
<213> Homo sapiens

<400> 2
gacgcagcag gaggaaactg ctcgggctgc aagcagtctt ccaggctttg cggctgccaa 60
aggaataatt gagacgtctg agttgagcag gtaaggcagg cagaaggagg aaagctagaa 120
aacctcgata agtcgatcct gaagaattct tgggctttgg agactggaga ggccaggggc 180
tggaggactt gggaagtggg aggggagctc ccagcccttg gctgcccga aggatcttcc 240
tccagtgcc ttcagagtt ctgtcagagt ccacacgtca tttatccatg tcctcagttt 300
ctcaggcatc tctttgcgac ttactcaggt cgcacagaga aagtgaatt gaaagcagga 360
ttgtctgttg gagtacttcc gcaggctcgt ctcttctcta ctctgatgcg tctcaggg 420
cttccttgat atttcctctc cttcccggt cctttgttta taccagccca cctcacatct 480
gattgtaatt gggacggtct acacaaacac tttggttcaa agatttcatt gcctggtgat 540
cgtgtatgtg ttgcacaatt aattaaactt ctaagaggct aatcaattaa cctctgaggc 600
tttgaaactg tcagagtggg gagattgctg aaaaagggtt gcttcgtgaa ttctatagca 660
gatgcagtta tttaaatatt caggtaacag ttccgggctg tctgatgatt gaactggatc 720
tgtaattctc agatctgatt gacagttgga cgaaattgat agctgccagt tgcctattcg 780
tgtagtagct atatgcacat gtgtaggag aatagaattc actaagcaat ttattttttc 840
ataacgggat ataattagct ctaacattca ttgagtggct aatatttgca aactccata 900
ctttaatgta ctttacacac atgactgtat ttatttttgt ctccatttca ggaaatagaa 960
aattgagatt caacaatcca aggttacagg aagtaatagt aaaaaattac acagccacaa 1020
gctcaaaact agatctccct aaggtcagag tacaagctct tttcactact gcagatactc 1080
cttgacttat gatgggggta catacagata aaccctcct aaattgaaa tattgtaggt 1140
caaaagcaca tttaatcac ctaatctact gaacgtcata gcttatccta gcttacctta 1200
aatgtgctca gaacacttac attaggctac agttgggcaa aatcatctag ctcaaagctt 1260
attttataat aaagtgttaa atgtctcatg tatttatcga atgctatgct gaaataaaaa 1320
acagaatggt tgtatgtgta cttgaagtgt ggtttctact gaatgttat tgcttttcca 1380
ccactgcaaa gtcaaaaaat cataaatcaa agtcaaaaa cataagtcag atattgtctg 1440
tactttaaat aggggcacag ggttgtaaaa agaggacatg cacagagtca gcaaacacag 1500
tgatcaacct tcctggtgac ataagaaatg caaagggaaa aaaagccaag aaatatattt 1560
ttcttattga atgaggggtt ttcttttttt attgataaat aattgatgtg catattttca 1620
tggctctttt tttttttttt tggaagccac ctatctctgg taagaatata tttatagac 1680

attgaaagca atttggttaat atagggttaag aatcctaaat acaatcatat cttttgaata 1740
gtcattaaat tctttgaagt ctatcatatg aaatctatca taagatctat cgaaagaaaa 1800
taaaactaaaa taagctgaat ttgctgcaac atcatttaga ttttttaaat ttttaatttt 1860
aaaaaacctt ttaaaactta tttttgaaaa cactcagta atagagaaat gaaacaactg 1920
tatgatttca tattacatag tcatgaaaaa tgttttacia gactttgcaa taacacagga 1980
aatgacttat agtatggtat taaatgaaag gaagtaggat acagtactt acagagtata 2040
attccaaatg tcttaaaaaa tatatagaaa taaactaaaa tattaacatt ggctgtttct 2100
gggcattggg actagagaaa taattttctt attttgaatt tacatatatt tataatattc 2160
tgtaatttaa aggttttata agaaataaat atatgtattt agaaaaaatg ctaatataat 2220
taattttctt gattcaagtg ttttctccct attgtaaaat tacaagcac ctctcttctg 2280
tgccaggtgg aatgtcagaa gactgagaac attgttctt cttcactactg ctgctctgtt 2340
gccagagaat cccaatttac actcaaagct tctttgatta agtgctagga gataaatttg 2400
cattttctca aggaaaaggc taaaagtggg agcaggtggc atttaccgtc atggagagca 2460
gggatcataa caacccccag gagggaccca cgctctccag cggtagaagg gctgcagtgg 2520
aagacaatca cttgctgatt aaagctgttc aaaacgaaga tgttgacctg gtccagcaat 2580
tgctggaagg tggagccaat gttaatttcc aggaagagga agggggctgg acacctctgc 2640
ataacgcagt acaaatgagc agggaggaca ttgtggaact tctgcttctg catggtgctg 2700
acctgttct gaggaagaag aatggggcca cgccttttat cctcgcagcg attgcgggga 2760
gcgtgaagct gctgaaactt ttcctttcta aaggagcaga tgtcaatgag tgtgattttt 2820
atggcttcac agccttcatg gaagccgctg tgtatggtta ggtcaaagcc ctaaaattcc 2880
tttataagag aggagcaaat gtgaatttga ggcgaagac aaaggaggat caagagcggc 2940
tgaggaaagg aggggccaca gctctcatgg acgctgctga aaaaggacac gtagaggctt 3000
tgaagattct ccttgatgag atgggggcag atgtaaacgc ctgtgacaat atgggcagaa 3060
atgccttgat ccatgctctc ctgagctctg acgatatgta tgtggaggct attacgcac 3120
tgctgctgga ccatggggct gatgtcaatg tgaggggaga aagagggag actcccctga 3180
tcctggcagt ggagaagaag cacttgggtt tgggtgcagag gcttctggag caagagcaca 3240
tagagattaa tgacacagac agtgatggca aaacagcact gctgcttgct gttgaactca 3300
aactgaagaa aatcgccgag ttgctgtgca aacgtggagc cagtacagat tgtggggatc 3360
ttgttatgac agcgaggcgg aattatgacc attcccttgt gaaggttctt ctctctcatg 3420
gagccaaaga agattttcac cctcctgctg aagactggaa gcctcagagc tcacactggg 3480
gggcagccct gaaggatctc cacagaatat accgccctat gattggcaaa ctcaagttct 3540
ttattgatga aaaatacaaa attgctgata cttcagaagg aggcattctac ctgggggttct 3600
atgagaagca agaagtagct gtgaagacgt tctgtgaggg cagcccacgt gcacagcggg 3660
aagtctcttg tctgcaaagc agccgagaga acagtcactt ggtgacattc tatgggagtg 3720
agagccacag gggccacttg tttgtgtgtg tcaccctctg tgagcagact ctggaagcgt 3780
gtttggatgt gcacagaggg gaagatgtgg aaaatgagga agatgaattt gcccgaaatg 3840
tcctgtcatc tatatttaag gctgttcaag aactacactt gtcctgtgga tacaccacc 3900

aggatctgca accacaaaac atcttaatag gtgagtcgcc aatccccaat tctctcttag 3960
 aaattgtggg atctttgttt atgataggaa aagtttttca ttgcagagag gaaaggccta 4020
 gagtaaatgt ggatgattca atttgtggat cattattaca acaaattcat aattacagt 4080
 cagtgtctcc tgctaccaat tataactggg ttctgttagt ctacatgaag gttggtagat 4140
 gccaacagaa taccaggcta gccttagatt gccattggca aaataaacag atgaaggcat 4200
 gtcatggatc aaagtagctc cagaaatctg agaatcctag aggtgagttc cttcagacaa 4260
 ggtggcagta accatgaaac ttactgacaa aattgaggtc aaagttgagg atgtcaggac 4320
 aagatgtgac gtagtgaaga cacagactcc aaggcagaac aagtcagaat ccactagtcc 4380
 aagccaaaca aaggaagga aaatagcatt ttctttttaa tgttaaaaga aaagcaaggc 4440
 tgaccgtaaa gtcccaggaa gcaatatggt gcgggggagc aagccagggc ttcagc gatg 4500
 attaggggtg cttgaagcct agtctcacta gttttagatt ttgtaacctc agacaagtca 4560
 cttgatactg tgagcctcag ttccctcactt gaggtctgata atgcctcctt cgtaagtttg 4620
 ttatgaggtc taagtgaat gatgaaatag taagtcattt ggtacatcat aggtgctcag 4680
 gaaaggctgt tcttgccctga aaggcttaag cagagtacat accttatcca tagacatgca 4740
 ctgagattta agctcagtgt aagggaacag ctccctttaca aatctgtgct ttcggcccct 4800
 ggaattgcat gaacgaggag ctgggttaaat ttgtcctcat cccttcctac cccttgccct 4860
 ggaaaaata aaatgtaagt gctgctcttg gcagatacct aacagatcaa atgaaacagt 4920
 gcacatggca gtgttttgag ggtggaatgg caaatacaga tataaggttt attattgcct 4980
 tccacagaga tgatgatttt tatagcatgt tacatattta tataaatcaa ttgactctca 5040
 ctttatggag aatgagtatt ttcaatgtgc ctctgcaaac ttttccttag attctaagaa 5100
 agctgctcac ctggcagatt ttgataagag catcaagtgg gctggagatc cacaggaagt 5160
 caagagagat ctagaggtaa attctacaat ccagtttacc tttcttcttt ctgcttcctt 5220
 attctttcat gtagtagtca ggttctctca gagggacaga actagtagga catatgtata 5280
 tatgaaaggg agtttattaa ggagaattga ctcacacggt cacaacataa agtcccataa 5340
 taagccatct gcaagttgag gaacaaggaa gccagtgatg ggtcagtcgt agtaccaaaa 5400
 cctcaaaaagt aggaagccg acagtgcagc cttcagtcgt tggccaaaagg cctgaaagcc 5460
 cctggcaaac cactggtgta agtccaaaac tccataagct gaagaacttg gatactgatg 5520
 tttgagggca ggaagcatcc agcacgggag aaagatgaag gccagaagtc ttagcaagtt 5580
 gtctgctctt tcattttctg cctgctttat tttagccatg ctggcagctg attagatggt 5640
 gccaccctg actgaatgtg ggtctgcctc tccagtccta ctgactcaaa tgttgctctc 5700
 cttcggcaac accctcacag acacaccag tcacaatact ttgtatcctt caactcaatc 5760
 aagttgacac tcaatattaa ccgtcacagt tcattacctt atttcctatg ggcaattgga 5820
 gggcattcta ttttaaccag gaaaaaaga atgttcaagg ctttccccat cttgctcact 5880
 gtctgactc ccctgtaggc catggcattt ccttgggctt ctccgcagc agagctttca 5940
 agatgacaat gggaagggtc aacagcttg gtcggtgtg agttggctgt cactgtggac 6000
 cttactgta tctctttgaa tctctcttcc tccactacct taataagtaa ataaactgag 6060
 catgccacat cttctctcca ggagagaatt tcaaatatct ccaatattca ttgaggagtt 6120
 attttctac ctaggaacaa agtaagttag gtttctttca ccacaaactc aaactcgtgg 6180

gctacactct gcagaaggct ggataactaag gttctctgaa aactcctggg aggagtgagg 6240
 tcaattccca gcttgaaaga acctaagctt ggccaaaaag atgaggactc tgaaatagct 6300
 gttgctcctg aggggacatg gagattggcc gctgtagacc aaagcccca ggctgattct 6360
 gaccctgtca gggtaggtct ttcctggaga gttttacagg gtgctgcaact ttcaaccag 6420
 tgggtgagac tctccacca tatgtctggc ctcttggtt ggtagcatca gatttcagct 6480
 ccctccttga ctggtggcta gtgcaaagag ttccttaggc gaccttcttc ttggcctttc 6540
 ctctggcca cggcctaact cctgggttca tcactttgcc tctcctggcc tggactgact 6600
 tttttatttg ctgctgaca tagcctcaga ccaaagtcc cagtttccag ccaggctgtc 6660
 agttctccct gtgtttaaag cattctccct ttcctcaatt tatctatatt ctgtccatac 6720
 atttgaggcc cagctcaaact ctctcttct ccaagcagtc tgcctaaca actgtgactt 6780
 atatgtatct tttactcttc ataaaactaa gtggtatggg cgatatactg ccttgaagag 6840
 gtctgtatgc acacatctgt gcctccctc cctaacaagc ctacaaattc cttgagattc 6900
 ctcccatcat cttgtttgct aatagcgtgc accactcctt ccagggttac ccaaataatt 6960
 agtaagcatc tttggcttga tttatggctt ttgtgcagga ccttgagcgg ctggtcctct 7020
 atgtggtaaa gaagggaagc atctcatttg aggatctgaa agctcaaagt aatgaagagg 7080
 tggttcaact ttctccagat gaggaacta aggacctcat tcatcgtctc ttccatcctg 7140
 gggaacatgt gagggactgt ctgagtgacc tgctgggtca tcccttcttt tggacttggg 7200
 agaggtaagt aaaactttgt gcagatgcc caggcctcca ggatggaaag ggtaaggagg 7260
 tgcagacaga agtctgggct gcaaatcagg agaccaggc ttttttctta gcttgggatt 7320
 tactggctgt gtgtccttgg agagatgact taacctctct ggagtctgct tttcatttct 7380
 gaagaataag gaggggaaaa aaagagatgc ttgcctctcc tatcatgcag aatttttgaa 7440
 gacatggttg tattactttt attaaaaacc aaaatctagc caggcgcggt ggctcacgcc 7500
 tgtaatccca gcactttggg aggccgaggc ggggtgatca tgaggtcagg agttccagac 7560
 cagcctggtc agcatggtga aacccctct ctactaaaaa taaaaaagt agccgagtgt 7620
 ggtggcagggt gcctgtaatg tcacctactt gggaagctga ggcaggagaa ttgcttgaac 7680
 ccgggagggt gaggttgacg tgagccaaga ttgcgtact gactccagc ttgggggaca 7740
 gagcgagact ccatctcaaa aaaaaaaaaa aaaaaaaaaa aaagaaagaa aaaccaagaa 7800
 agcacaaaaa acacaaaaat ctaacggttt tctttttctg gaaaaggaaa gggagggatg 7860
 ggatgatcat gatcatttag atcatttagt catcttcagc cgctatagga cgcttcggaa 7920
 tgtgggaaat gaatccgaca tcaaacacg aaaatctgaa agtgagatcc tcagactact 7980
 gcaacctggg ccttctgaac attcctaaaag ttttgacaag tggacgacta aggtatgaac 8040
 aattcctata gtgcagggt tagtccagga ataagaattt gtgtaatgtt ttatgttagt 8100
 ttttctatct ttttttacac cagtggcaaa ccagaggctc aaagagggtga ttttgcctcc 8160
 tgccctccca tccctatccc ctaggctcc ctgcccgggt gtctacttct actttcagaa 8220
 gctggccctc cctctctccc attcagacct atgcccctct gatagactgt tattcaggct 8280
 cccctggat ggccttatcc cagccatga gcctttccct cacttagctg ataactctat 8340
 tgccattatg gcacgagcag ctgactaaat agagcttaat ccaagggaag tgcttcacca 8400

tgaggtgttt cagtcaggt acagcctggc tgccctccact gcctgtaaac agcccagctc	8460
tcaggatcca cacacagacc tacattctgc ctgaggaaat agactatgaa ggaagatga	8520
tctttcaa at tgctctcttt aagaaaagtt ccacctaaact tgcattaatt atagtgaac	8580
tctacaaaat tagtcatcat ctcaatctag tcagtactgt cagaactttc attattaatt	8640
aacaaacatc tatacaatac caattatgtg ctaggcccat gcaaggcctt gagcatacaa	8700
agcagaatac aatgtgtccc tgtggggctg agaagcccat ggaaatgatg ctgtgggatg	8760
tgtgctgggc atcccaggga catgtgcaaa gcactatggg agaaccata atcttcaggt	8820
cttggaacc aacagcttcc taccctagac ctgacctggg actctgcttc tcctaattct	8880
tgttttgctt tccttccctc actggtctct agactgcaca tcacactcat aattactggc	8940
ttacggtcca ttttccttgc tagactgtaa gttccatgaa ggcagagact acccattgtc	9000
ttgtcagtta ttgtatccct ggcattggagt agatgtgcca tgactcttta ctaaataaat	9060
gtctatcaaa ctttggctaa aattttaact tgtagaaaca aagaaatttg aaagcagcta	9120
tgatagtgat agctaatac tacgtagtat cattatgatt atgtggcagc catagtctct	9180
gagactttac atgagttacc acatttaac tttagcacia cttctgagac aatcatctat	9240
attttgaga tgagcaagct gaggcacaga caaataattt ttccaactac acagaaccag	9300
taaggggtgc accaggattt gaagctggga aggatggctg cagaggccat gtgcttaagc	9360
cacaccacta catgaagctg tgatggcatc aagtctacca actcatttac tcaactgaga	9420
aattgaggct cagagaccac actcaaatta ctcatgctg acagtcagag attggcagac	9480
ctggaagag gaacttgctt ttttatttcc caatttattg gttcttttcc ctaaattcca	9540
tgggcttata ttgaattttg atagtcttca ggttttaact tcaagtttta ctttttaatt	9600
cccattttac actttgtttt tctgttgact tgccattttt catggtcaca caattaattt	9660
tgtcagcata ggtctggagc ccaagttttc cagcttgat gactgtattg gttcttgact	9720
tgcccatcc tgccacacat acgtgcttgg cgtttctcac ggggtgtctg cacagagtgc	9780
acctggccag tctcagcagc atccctacta gcattgctct ttcacagtt actcttccta	9840
agtgacccac tggattcttg actgttgc attgatctcg tagcccaaac tctttctaaa	9900
tatgagagcc atctatggct ctgtatctat gagggtgaca agcacagaca aagaggatga	9960
cattactgtg atatgaaagg agtggccctg ggacacctgc aggcaaggag aagcaagtaa	10020
ccttgtttaa aatataaatt ttagagggta ctagtatagt tttgttacct ggatatattg	10080
tgtagtggta aagttgggct tttagtgtaa ccattacctg aataacgcac attgtacca	10140
ttaagtaatt tctcatccct ctccctccaa cctccacc tttccaagtc tccaattata	10200
ttattccact ctgtacatcc atgtgtacac attattgagc tcccacttat aagagagAAC	10260
atgtgatatt tgactttctg tttgtaagtc atttactta aaataatggc ctccagttcc	10320
gtccatgtgg ccacaaaaga catgatttca ttcttctttt ttatggctga aatggccag	10380
acacattttc tttatccaat catctgttga tggacactta ggtggattcc atatctttgc	10440
tattgtgaat agtgcgttag taaacatatg agtgccggta tctttttgat ataagatttc	10500
ttgggctgag tgcagtggct cacacctgta atcccagcac tttgggagc cgagatgggt	10560
ggatcatttg aggtcaggag ttttaagacca gcctggccaa catggcaaaa ccctgtctct	10620
actaaaaata caaaacttag ccaagcattg tggcacacgt ctgtaatccc agctacttgg	10680

gcggctgagg catgagaatt gcttcagcct gtgaagcaga ggttacagct ttattttggc 10740
agatactcag tacattcttt tctctgcatc ctcacaaaca tctgttactt ttgactttt 10800
taatagtagc ccctagtata agatgatatc tcattgggtt taatttgcat ttctctgatg 10860
attagtgatg ttaagcattt ttcatatgc tttttggcaa ttgtacgtc ttcttttgag 10920
aaatgtctat tcttgtcatt tgcccacttt ttaatgggtg tattattttt tattgttaag 10980
ttgtttgagt tccttgtaaa ttctggatat caatcctctg ttggatgcat agtttgcaa 11040
tatttttttt cccatgctgc aggttggtt ttcactctgt ttatttcttt tgctgcgcag 11100
aagtttttag ttaattaaaa ccccatctgt ttctttattt tcattgcttg tgcttttggg 11160
gtcttagtca tgaattcttt gcctagacca atgtccagaa gagtttttcc taggttttct 11220
tttagtattt ttatagtttc aggtcttaca ttaagtctt taatccatct tgagttgatt 11280
tttgatataca ctgagagaga gaggtctagt ttaaatcttc tacatatggc agtctaattt 11340
tcccagcacc acttactgaa taggtgtct tttcccagt gtatgtttt gccgactttg 11400
tctaagatca gttggttgta gatagtggc tttatttggt gcttctgtat tctgttccat 11460
tgatctatgt gtctattttt ataccagtac tgtgctgtt tggttatctt agccttgac 11520
aataattgga ggtatatcat aatgtgatgc ctccaacttt gtttttttt ccttaagatg 11580
cctgtggcta tttgggtct tttttgggt catgtgaatt ttaggatttt ttctctaatt 11640
ctgtgaaaaa tgatgttggg attttgatag ggattgcatt gaatctgtag attgctttgg 11700
gcggggtgat cactttaaca atattagtta ttccttttgg aaatatacct aaaaaaaca 11760
aaacaaaca acaaaaccgt tcactttggc catggttggc aggcccagtt tcagtctgaa 11820
tagccctttt aaagaaagac atgtaataca gtacgaattt gaaaggggtg ccacaggata 11880
aaaatattgt atagtataat gaacgacttt cctagtatag tagtcaaaga ttttttaacc 11940
atattttaat atatttaatt tcttatgaaa acaatttact tggaaaatac agacacacat 12000
ttgaacatac ttataatctc acatccagac acaattatat atatagtttt aattttaaaa 12060
tttttttaat ttttttgcca ggtgtggcgg ctcacacctg taatcccagc actttggggg 12120
ccaaggtggg tggatcacga ggtcaggagt ttgagaccag cctggccaac atggtgaaac 12180
cctgtctcta ctaaaaatac aaaaaaaaa aaattagctg ggcatagtgg cgggtgcctg 12240
taatcccagc tactcgggag gctgaggcag gagaatcgct tgaacccggg aggcggagggt 12300
tgcatgagc caagatcgca cactgtact ccagccctgg tgacagagtg agactccgtc 12360
ttgaaaaaaa aaaaattatt tttttgagat ggagtcttgc tctgttactg agaccggagt 12420
gcagtgggtg gatctcagct ctctgcaacc tccacctccc aggttcaagt gactctctg 12480
cctcagtctc ccaagtagct gggattacag gcagcgccac cagcctggc taatttttta 12540
gcagaaaact ttagtagaaa cgaggtttca ctgtgttggc caggctggtc tcaatctcct 12600
gacctcagg gtatccgcca tttcgccctc tgaaagtgt gggactacag atgtgagcca 12660
ccccaccag cccagacaca attatagtta gcattttggg atacagcatt tacttccatt 12720
tttaattat tttgctttat taattagtgt gtaattatag aatatatgaa tatattcaaa 12780
tttatatttt gccttttggg atgaatatc catcaggatt tattttgtgt tgctaccaca 12840
tttttgtgtt attttttggg ttttttagatt aatgaatgtg ttatgaaaaa aatgaataag 12900

ttttatgaaa aaagaggcaa tttctaccag aacactgtgg gtgatctgct aaagttcatc 12960
cggaatttgg gagaacacat tgatgaagaa aagcataaaa agtaagtatt gttttcattc 13020
ctacaaatta tatgtgaaat gagaacaatt taataaatcc aattctaagt ttatatctac 13080
gatggaaaaa agaaaattta ttttgatgaa agaaaagtaa ttccttccct ctgtgtgtaa 13140
aagggtctatc actgttgccct tacaattaat gagggacatg tccagcaggc tttcatcttc 13200
cttgtcattt tttgttggga taaatggtaa aacaaattga acaggagcta gtgactccct 13260
tctgtgaagt aacacaggag actggacagc tagataaagt gaaggtagag ttatatacgt 13320
ctaaaaatag cccacattag ttagatcagc ttttgctgac aaagatgtta gttgcaaact 13380
cacaaaaaag ccttgcagtt cagggctctt ctggattttg gaattgtagg tagaggattg 13440
tggcattgca ctatttccat tttatgaaag aacaatctaa agttcagaaa gattgtggcc 13500
aaaggttgca caattagttg aagagtcagg ggaggagtct tgctctgtca gattccaaag 13560
tccttattca ttctgcaata gaaatcaagc gagcaaagag atcttcaggg ccatatgctg 13620
tgaagcgggg aagaataatt tggggcaagc atgctgaaca atttgtgttt tatttcagga 13680
tgaaattaaa aattggagac ccttccctgt attttcagaa gacatttcca gatctggtga 13740
tctatgtcta cacaaaacta cagaacacag aatatagaaa gcatttcccc caaaccaca 13800
gtccaaacaa gcctcagtgat gatggagctg gtggggccag tgggttgcc agccctgggt 13860
gctgatggac tgatttgcgt gagttcaggg aactacttat tagctgtaga gtccttggca 13920
aatcacaca ttctgggcct ttttaactcac caggttgctt gtgagggatg agttgcatag 13980
ctgatatgct agtccctggc atcgtgtatt ccatatgtct ataacaaaag caatatatac 14040
ccagactaca ctagtccata agctttaccc actaactggg aggacattct gctaagattc 14100
cttttgtcaa ttgcacaaa agaattgagt ccttgacccc taatgctgca tatgttaca 14160
ttctctcact taattttccc aatgatcttg caaacaggg attatcatcc ccatttaaga 14220
actgaggaac ctgagactca gagagtgtga gctactggcc caagattatt caatttatac 14280
ctagcacttt ataaatttat gtggtgttat tggtagctct catttgggca ccttaaaact 14340
taactatcct tccagggtc ttccagatga ggcccaaac atatatagg gttccaggaa 14400
tctcattcat tcattcagta tttattgagc atctagtata agtctgggca ctggatgcat 14460
gaattccact ccttcagaa ccaactgcat tggttttcca tgaccttaag gcagtagttc 14520
tcaactgggg ggcaattttg cactgaagag agcatttggc agagtctgaa gaagtttttg 14580
gtgtcacagc tttgtggga gcatgctatg gcatttagtg ggtaaagacc agggatgctg 14640
ccaaacctgc cttgcacagg acagcccctg caacaaagaa ttatccagac aaaaatatca 14700
atggtgctga ggttgagaaa acctgactta aggggctggg atgcttttga actagcttaa 14760
ggcccaggac tgtggagtgt gtggaccacc ccacagagga gggactcaga tttatttact 14820
cttgctggat ctgtagtgat ggagttcctt ctggtgtcag cccacagga ggctcccagg 14880
cctccctcac tcccatacc cagtctagga gtccttctg gtcctcaagc acccagagct 14940
ttcctccgcc ttttagtttt ggttcctcca ctggaatgta ggctcctcac gggcgatggc 15000
tgtcttttct tgactttgta tcttactgc caagcaaaaa gtctgccaag tgggaatgtt 15060
taataaatat tcattgaata atgaatgaac catcttcgta catgaataat aatactgtct 15120
tacgtttttc tgggtgttta taatgtatac attacatctg agtattttat tttattta 15180

```

tttcaaaaca atcctttaag gtcaacattg ttatccctat ttgctgatg aggaaactaa 15240
ggttagaaac attttgattt cctctaggac gtatagctag gaagtgttac tatcttgatt 15300
tgaacaaatt ttctgggtgct aagtctgatg ttctttccat gaatcattgt ggtggttgag 15360
atggagcttt gtaatgggaa taaaacagta ccttaggttc ttctgaaaa ggaggatatct 15420
agcaatggat aaatagatac cactgaatga aattaaatgt tgattaggaa caaatttaag 15480
gcttaaaaaa tactttatga gcagcaagat tgctttaact tttaaaatga agctttggtt 15540
ctctgatttg taatgagcac ctggacatgt caattaaaat gccatttgt gaagcttact 15600
caataaaaact ttaaattgtc 15620

```

```

<210> 3
<211> 20
<212> DNA
<213> Artificial sequene

```

```

<220>
<223> Single strand DNA oligonucleotide

```

```

<400> 3
aagcttcttt gattaagtgc 20

```

```

<210> 4
<211> 18
<212> DNA
<213> Artificial sequene

```

```

<220>
<223> Single strand DNA oligonucleotide

```

```

<400> 4
agtttcagca gcttcagc 18

```

```

<210> 5
<211> 19
<212> DNA
<213> Artificial sequene

```

```

<220>
<223> Single strand DNA oligonucleotide

```

```

<400> 5
tttatcctcg cagcgattg 19

```

```

<210> 6
<211> 21
<212> DNA
<213> Artificial sequene

```

```

<220>
<223> Single strand DNA oligonucleotide

```

```

<400> 6
gcgtaatagc ctccacatca c 21

```

```

<210> 7
<211> 21
<212> DNA
<213> Artificial sequene

```

```

<220>
<223> Single strand DNA oligonucleotide

```

```

<400> 7

```

11

catgctctcc tgagctctga c

21

<210> 8

<211> 19

<212> DNA

<213> Artificial sequene

<220>

<223> Single strand DNA oligonucleotide

<400> 8

ccttcacaag ggaatggtc

19

<210> 9

<211> 18

<212> DNA

<213> Artificial sequene

<220>

<223> Single strand DNA oligonucleotide

<400> 9

tcttggtatg acagcgag

18

<210> 10

<211> 18

<212> DNA

<213> Artificial sequene

<220>

<223> Single strand DNA oligonucleotide

<400> 10

cacacacaaa caagtggc

18

<210> 11

<211> 22

<212> DNA

<213> Artificial sequene

<220>

<223> Single strand DNA oligonucleotide

<400> 11

attctatggg agtgagagcc ac

22

<210> 12

<211> 21

<212> DNA

<213> Artificial sequene

<220>

<223> Single strand DNA oligonucleotide

<400> 12

cacatttact ctaggccttt c

21

<210> 13

<211> 18

<212> DNA

<213> Artificial sequene

<220>

<223> Single strand DNA oligonucleotide

<400> 13

ccttcacag agatgatg

18

<210> 14
<211> 22
<212> DNA
<213> Artificial sequene

<220>
<223> Single strand DNA oligonucleotide

<400> 14
agagaaccct gactactaca tg 22

<210> 15
<211> 18
<212> DNA
<213> Artificial sequene

<220>
<223> Single strand DNA oligonucleotide

<400> 15
cactccttcc aggggttac 18

<210> 16
<211> 18
<212> DNA
<213> Artificial sequene

<220>
<223> Single strand DNA oligonucleotide

<400> 16
cacacagcca gtaaattcc 18

<210> 17
<211> 22
<212> DNA
<213> Artificial sequene

<220>
<223> Single strand DNA oligonucleotide

<400> 17
aaggaaagg agggatggga tg 22

<210> 18
<211> 20
<212> DNA
<213> Artificial sequene

<220>
<223> Single strand DNA oligonucleotide

<400> 18
gagcctctgg ttgccactg 20

<210> 19
<211> 20
<212> DNA
<213> Artificial sequene

<220>
<223> Single strand DNA oligonucleotide

<400> 19
atattttgcc ttttggtatg 20

<210> 20
<211> 22
<212> DNA

13

<213> Artificial sequene

<220>

<223> Single strand DNA oligonucleotide

<400> 20

gtagatataa acttagaatt gg

22

<210> 21

<211> 18

<212> DNA

<213> Artificial sequene

<220>

<223> Single strand DNA oligonucleotide

<400> 21

catgctgaac aatttggtg

18

<210> 22

<211> 21

<212> DNA

<213> Artificial sequene

<220>

<223> Single strand DNA oligonucleotide

<400> 22

taaagcttat ggactagtgt a

21

<210> 23

<211> 22

<212> DNA

<213> Artificial sequene

<220>

<223> Single strand DNA oligonucleotide

<400> 23

attctatggg agtgagagcc ac

22

<210> 24

<211> 21

<212> DNA

<213> Artificial sequene

<220>

<223> Single strand DNA oligonucleotide

<400> 24

gagctttcag atcctcaaat g

21

<210> 25

<211> 22

<212> DNA

<213> Artificial sequene

<220>

<223> Single strand DNA oligonucleotide

<400> 25

tgtggtaaag aagggaagca tc

22

<210> 26

<211> 22

<212> DNA

<213> Artificial sequene

<220>

14

<223> Single strand DNA oligonucleotide

<400> 26

agagaaccct gactactaca tg

22

<210> 27

<211> 20

<212> DNA

<213> Artificial sequene

<220>

<223> Single strand DNA oligonucleotide

<400> 27

aaagaggcaa tttctaccag

20

<210> 28

<211> 19

<212> DNA

<213> Artificial sequene

<220>

<223> Single strand DNA oligonucleotide

<400> 28

tgccagggac tgacatatc

19

<210> 29

<211> 22

<212> DNA

<213> Artificial sequene

<220>

<223> Single strand DNA oligonucleotide

<400> 29

ttgtgaggga tgagttgcat ag

22

<210> 30

<211> 22

<212> DNA

<213> Artificial sequene

<220>

<223> Single strand DNA oligonucleotide

<400> 30

catccagtgc ccagacttat ac

22

<210> 31

<211> 19

<212> DNA

<213> Artificial sequene

<220>

<223> Single strand DNA oligonucleotide

<400> 31

gaagttgcag tgaacagag

19

<210> 32

<211> 20

<212> DNA

<213> Artificial sequene

<220>

<223> Single strand DNA oligonucleotide

<400> 32

15

atgctaagtt gtgttgactc

20

<210> 33
<211> 20
<212> DNA
<213> Artificial sequene

<220>
<223> Single strand DNA oligonucleotide

<400> 33
gcttctccat atttattcac

20

<210> 34
<211> 18
<212> DNA
<213> Artificial sequene

<220>
<223> Single strand DNA oligonucleotide

<400> 34
aaagggtgc tatctgag

18

<210> 35
<211> 35
<212> DNA
<213> Artificial sequene

<220>
<223> Single strand DNA oligonucleotide

<400> 35
atttgaggcg aaagacgagg atcaagagcg gctga

35

<210> 36
<211> 40
<212> DNA
<213> Artificial sequene

<220>
<223> Single strand DNA oligonucleotide

<400> 36
aatttgaggc gaaagacaaa ggaggatcaa gagcggctga

40

<210> 37
<211> 40
<212> DNA
<213> Artificial sequene

<220>
<223> Single strand DNA oligonucleotide

<400> 37
ctttctaaag gagcagatgt taatgagtgt gatttttatg

40

<210> 38
<211> 40
<212> DNA
<213> Artificial sequene

<220>
<223> Single strand DNA oligonucleotide

<400> 38
ctttctaaag gagcagatgt caatgagtgt gatttttatg

40

16

<210> 39
<211> 28
<212> DNA
<213> Artificial sequene

<220>
<223> Single strand DNA oligonucleotide

<400> 39
gaaaagcata aaaataagta ttgttttc

28

<210> 40
<211> 29
<212> DNA
<213> Artificial sequene

<220>
<223> Single strand DNA oligonucleotide

<400> 40
gaaaagcata aaaagtaagt attgttttc

29

<210> 41
<211> 13
<212> PRT
<213> Artificial sequene

<220>
<223> Synthetic peptide

<400> 41

Asn Lys Thr Cys Phe His Ser Thr Lys Leu Thr Val Lys
1 5 10